



OCCUPATIONAL HEALTH and FUNERAL HOMES

Division of Environmental and Occupational Health

March 1997

Introduction

Funeral home employers and employees face a variety of health hazards at work. This publication provides basic information on several of these hazards and ways to control exposure to them. Pertinent legal requirements under OSHA (the federal Occupational Safety and Health Administration) are summarized where they exist. Relevant NJ State Board of Mortuary Science requirements are also given. The following topics are covered:

- ! Formaldehyde Exposure**
- ! Bloodborne Pathogen Exposure**
- ! Hazard Communication**
- ! Personal Protective Equipment**
- ! Respiratory Protection**

Formaldehyde Exposure

New Jersey funeral homes use formaldehyde preservatives as embalming and hardening agents. Potential exposure to formaldehyde-containing solutions or powders occurs via inhalation, and direct skin and/or eye contact.

The health effects of formaldehyde exposure are respiratory irritation, eye irritation, skin irritation, dermatitis, respiratory sensitization (possibly leading to occupational asthma), and cancer.

The OSHA Permissible Exposure Limit (PEL) for formaldehyde is 0.75 ppm (parts per million parts of air) averaged over an 8-hour work day, with a ceiling limit (the concentration that should never be exceeded) of 2 ppm. Occupational exposure limits established by other organizations for airborne exposure to formaldehyde are lower. For example, the NIOSH (National Institute for Occupational Safety and Health) Recommended Exposure Limit (REL) is 0.016 ppm with a ceiling limit of 0.1 ppm, and the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV) is 0.3 ppm as a ceiling limit.

Several studies at funeral homes have shown that these exposure limits can be exceeded during body preparation procedures. The degree of formaldehyde exposure is dependent on a number of factors, such as:

- ! formaldehyde concentration in the embalming solution,
- ! type of embalming procedure and if it is performed on an autopsied body,
- ! variations in personal technique and work practices,
- ! use of local exhaust ventilation versus general room ventilation,
- ! mortician position in relation to air flow in an embalming room equipped with general ventilation,
- ! effective use of appropriate respiratory protective equipment.

The **OSHA Formaldehyde Standard (29 CFR 1910.1048)** addresses many aspects of formaldehyde use in an occupational setting, including:

- ! exposure determination by air monitoring,
- ! medical surveillance for overexposed employees,
- ! maintenance of engineering controls (proper ventilation) and safe work practices,
- ! appropriate personal protective clothing and equipment,
- ! shower and eyewash facilities,
- ! housekeeping and spill cleanup,
- ! hazard communication program, which addresses:
 - # employee information and training requirements,
 - # material safety data sheet requirements,
 - # posting of work areas with signs,
 - # labeling of formaldehyde-containing agents and wastes.

The most effective means of controlling exposures to formaldehyde is the use of effective local and/or general exhaust ventilation in conjunction with good work practices.

A Hazardous Substance Fact Sheet on formaldehyde is available from the NJDHSS Worker Right to Know Program by calling (609) 984-2202. The Fact Sheet summarizes health effects and exposure controls.

Bloodborne Pathogens Exposure

The embalming procedure requires the mortician to work with large amounts of blood, which is potentially infectious. Exposure to blood can occur during many steps in the procedure and enter the body through contact with broken skin, by inhalation of aerosols, and by splashing into the eyes, nose, or mouth.

Embalming procedures place the mortician at risk of exposure to the causative viruses for AIDS (HIV), hepatitis B (HBV), and other bloodborne pathogens.

A number of factors in embalming procedures pose an increased risk for mortician contact with blood:

- ! blood accumulations on embalming tables and in body cavities, increasing the potential for splashes,
- ! needle sticks during suturing,
- ! cuts or scrapes to hands and forearms due to exposed ribs in autopsied bodies,
- ! aerosols generated by improperly placed aspirator discharge nozzles,
- ! excessive embalming pump pressures or sudden pressure releases, causing sprays,
- ! variations in personal techniques and work practices while handling viscera/organs.

The **OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030)** covers employees in funeral homes who have a reasonable anticipation of exposure to human blood or other potentially infectious materials. The standard requires the development and implementation of a bloodborne pathogens exposure control plan, which addresses the following:

- ! exposure determination by job classification and job tasks or procedures,
- ! the use of universal precautions, which includes:
 - # personal protective equipment and clothing, such as:
 - " disposable latex gloves (note: the use of latex gloves has recently become associated with an outbreak of allergic reactions, and substitutes should be provided where indicated),
 - " non-disposable, heavy-duty gloves impervious to liquids for working on autopsied bodies,
 - " disposable face masks,
 - " goggles or face shields,
 - " gowns or other protective garments impervious to liquids,
 - " head and shoe covers,
 - # safe work practice descriptions for potentially hazardous activities, such as:
 - " removal of human remains,
 - " transportation of human remains,
 - " embalming/preparation of human remains,
 - " dressing/casketizing/cosmetizing of human remains,
 - " housekeeping,
 - " personal hygiene activities,
 - " handling of needles and other sharps,
 - " disposal of waste materials,
- ! hepatitis B immunization program,
- ! pose-exposure evaluation and follow-up,
- ! labeling,
- ! training and information,
- ! recordkeeping.

Hazard Communication

The intent of hazard communication is to ensure that all employees know about the chemical hazards present at their workplace and how to protect themselves and others; thus, reducing the incidence of illness and injuries related to chemical exposure.

The **OSHA Hazard Communication Standard (29 CFR 1910.1200)** provides for safe handling of hazardous substances in general. Additional requirements have been established for the handling of certain substances that OSHA considers particularly hazardous, such as formaldehyde and bloodborne pathogens, and these are specified in the OSHA Formaldehyde and Bloodborne Pathogen Standards. The OSHA Hazard Communication Standard requires:

- ! evaluation of chemical hazards by manufacturers and importers, who are then required to report the information to purchasers on *Material Safety Data Sheets* (MSDSs),
- ! development, implementation, and maintenance of a written hazard communication program by employers,
- ! written inventory of all hazardous chemicals,
- ! maintenance of MSDSs for all hazardous chemicals,
- ! labeling, tagging, or marking of containers of hazardous materials,
- ! establishment of an employee information and training program, which covers:
 - # information:
 - " explanation of the requirements of the standard,
 - " components of the program in place at the funeral home,
 - " procedures in work areas where hazardous chemicals are present,
 - " location of written program, hazard evaluation procedures, hazardous chemical inventory, and MSDSs,
 - # training:
 - " how to read and interpret information on labels and MSDSs,
 - " hazards of chemicals in the work area,
 - " measures that employees can take to protect themselves,
 - " purpose and operation of engineering controls,
 - " safe work practices,
 - " selection and use of personal protective clothing and equipment,
 - " procedures to be followed in the event of a spill.

Personal Protective Equipment

Personal protective equipment (PPE) includes all clothing and other work accessories designed to create a barrier against workplace hazards. PPE should not be used as a substitute for engineering, work practice, and administrative controls. Some of the PPE required for use in funeral homes is specified in the OSHA Formaldehyde and Bloodborne Pathogens Standards.

The **OSHA Personal Protective Equipment Standard (29 CFR 1910.132)** requires the following:

- ! assessment of the workplace to determine if hazards that require the use of PPE are present or likely to be present,
- ! provision of appropriate PPE to employees,
- ! training for employees required to use PPE, consisting of the following:
 - # when PPE is necessary,
 - # what PPE is necessary,
 - # how to properly don, doff, adjust, and wear PPE,
 - # limitations of the PPE,
 - # proper care, maintenance, useful life, and disposal of PPE.

Other **OSHA PPE Standards (29 CFR 1910.133,135,136, and 138)** mandate specific requirements for eye and face protection, head protection, foot protection, and hand protection.

Respiratory Protection

Respiratory protective equipment may be required to control exposures to formaldehyde during times when other methods such as engineering, work practice, and administrative controls are not in place, or are not sufficient, to reduce exposures below limits. Respiratory protective devices should not be used as a substitute for these other controls.

When respirators are used, the **OSHA Respiratory Protection Standard (29 CFR 1910.134)** requires that a written respiratory protection program be established and implemented which effectively covers the following topics:

- ! written standard operating procedures,
- ! regular evaluation of the effectiveness of the program,
- ! proper selection and use of respirators,
- ! training of the respirator user,
- ! testing of respirator fit,
- ! inspection, maintenance, cleaning, and storage of respirators,
- ! medical qualification of respirator users,
- ! continuing surveillance of work area conditions where respirators are used.

New Jersey State Board of Mortuary Science Requirements

There are approximately 800 funeral homes in New Jersey and approximately 1800 funeral directors (embalmers) licensed by the New Jersey State Board of Mortuary Science. The State Board of Mortuary Science statutes (NJSA 13:36) specify the following:

- ! **Disposition of dead human remains [13:36-5.18(b)]**: “Viscera shall be treated with embalming fluid and hardening compound containing formaldehyde preservative and interred with the remains.”

- ! Equipment requirements [13:36-5.6]:** “For each licensee and trainee, protection, apparel and/or equipment as required by all applicable standards of the Occupational Safety and Health Administration (OSHA).”
- ! Disposal of blood and excretia [13:36-6.4]:** “. . . Licensees shall comply with the OSHA regulations (See 29 CFR 1910.1030) in the operation of a licensed funeral establishment and shall use universal precautions according to the Centers for Disease Control recommendations. . .”
- ! Marking receptacles [13:36-6.5(a)]:** “All receptacles containing embalming fluid, formaldehyde or any poisonous or dangerous substances shall be plainly marked to indicate the contents thereof in compliance with 29 CFR 1910.1048.

New Jersey Department of Health and Senior Services
Occupational Disease Epidemiology and Surveillance Program
PO Box 360
Trenton, New Jersey 08625-0360
(609) 984-1863
<http://www.state.nj.us/health/eoh>